

U.S. Global Change Research Program National Climate Assessment Global Change Information System

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United States
Global Change
Research Program

www.globalchange.gov

The Global Change Research Act and USGCRP

- USGCRP was mandated by Congress in the Global Change Research Act (GCRA) of 1990 (P.L. 101 – 606)

*“To provide for development and **coordination** of a comprehensive and integrated United States Research Program which will assist the Nation and the world to **understand, assess, predict, and respond** to human-induced and natural processes of global change.”*



U.S. Global Change Research Program

The Program:

- ***Coordinates*** Federal research to better understand and prepare the nation for global change
- ***Prioritizes*** and supports cutting edge scientific work in global change
- ***Assesses*** the state of scientific knowledge and the Nation's readiness to respond to global change
- ***Communicates*** research findings to inform, educate, and engage the global community



United States Global Change Research Program



Subcommittee for Global Change Research



Subcommittee for Global Change Research

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Ann Bartuska, Department of Agriculture
Vice Chair for Adaptation Science

Michael Freilich, NASA
Vice Chair for Integrated Observations

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Technology Program**

Fabien Laurier
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Jonathan Pershing, Department of State

Joann Roskoski, National Science Foundation

Andy Miller, Environmental Protection Agency

Joel Clement, Department of the Interior

Linwood Vincent, Department of Defense

Katherine Batten USAID



The USGCRP Vision and Mission

Vision - *A nation, globally engaged and guided by science, meeting the challenges of climate and global change.*

Mission - *To build a knowledge base that informs human responses to climate and global change through coordinated and integrated federal programs of research, education, communication, and decision support.*



US Global Change Research Program

Strategic Plan (2012-2021)

- Draft reviewed by National Research Council and public comment
- More information at <http://globalchange.gov>

Goals

- Advance Science
- Inform Decisions
- Conduct Sustained Assessments
- Communicate and Educate





U.S. Global Change Research Program

National Climate Assessment

<http://assessment.globalchange.gov>

Global Change Research Act (1990), Section 106

...not less frequently than every 4 years, the Council... shall prepare... an assessment which—

- integrates, evaluates, and interprets the findings of the Program and discusses the scientific uncertainties associated with such findings;
- analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; and
- analyzes current trends in global change, both human- induced and natural, and projects major trends for the subsequent 25 to 100 years.



Previous National Climate Assessments

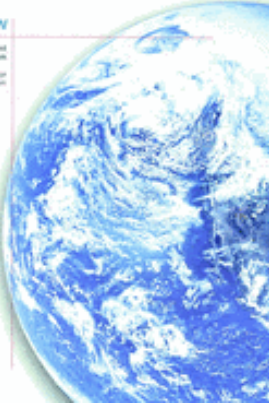
Climate Change Impacts on the United States (2000)

CLIMATE CHANGE IMPACTS ON THE UNITED STATES

The Potential Consequences of Climate Variability and Change

Overview

National Assessment
Synthesis Team
U.S. Global Change
Research Program

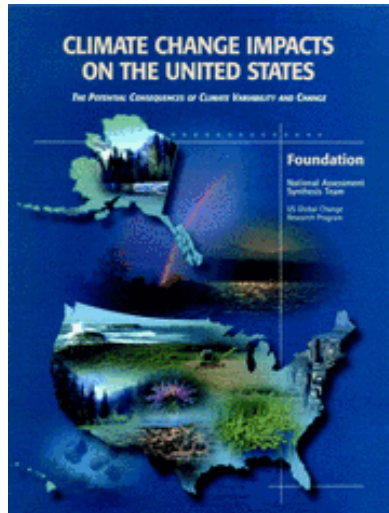


CLIMATE CHANGE IMPACTS ON THE UNITED STATES

The Potential Consequences of Climate Variability and Change

Foundation

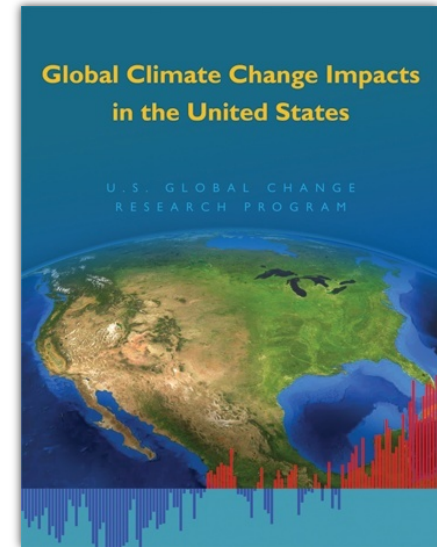
National Assessment
Synthesis Team
U.S. Global Change
Research Program



Global Climate Change Impacts in the United States (2009)

Global Climate Change Impacts in the United States

U.S. GLOBAL CHANGE
RESEARCH PROGRAM



<http://nca2009.globalchange.gov>

Target date for next NCA: 2013



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The “New” National Climate Assessment



Goal

- Enhance the ability of the United States to anticipate, mitigate, and adapt to changes in the global environment.

Vision

- Advance an inclusive, broad-based, and sustained process for assessing and communicating scientific knowledge of the impacts, risks, and vulnerabilities associated with a changing global climate in support of decision-making across the United States.



NCA 2013

- Technical Input Process
 - Over 250 submissions from over 120 individuals or teams and an additional 200+ collected by NCADAC working groups.
- Working on communication and presentation
 - *content* and *traceability* to inputs and sources

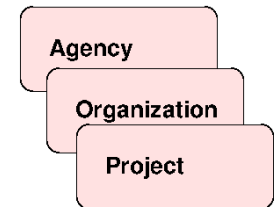
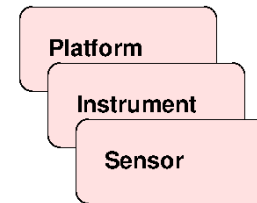
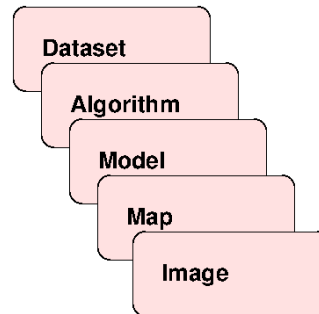
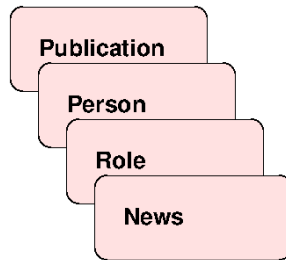


Global Change Information System (GCIS)

- A web based source of *authoritative*, *accessible*, *usable*, and *timely* information about climate and global change for use by scientists, decision makers, and the public.



GCIS



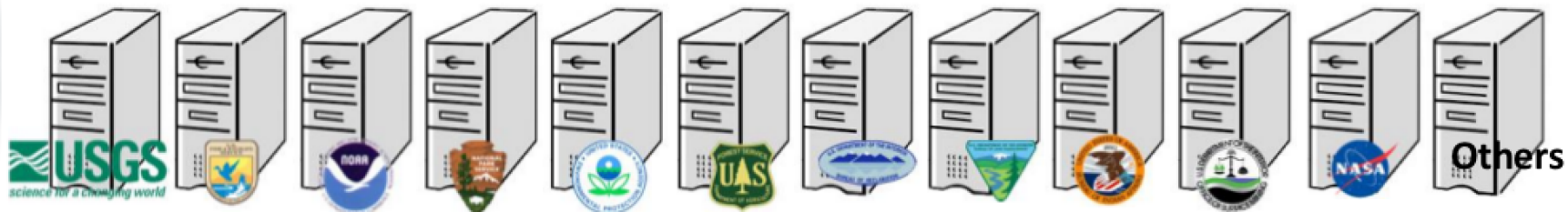
Catalog items that are mature, authoritative, persistent, with an appropriate subset of suitable metadata.

Tag each item with topic keywords and relationships.

Maintain link back to the Agency 'home' for each item.

Structured Metadata
Field: Value
Field: Value
Field: Value
Field: Value

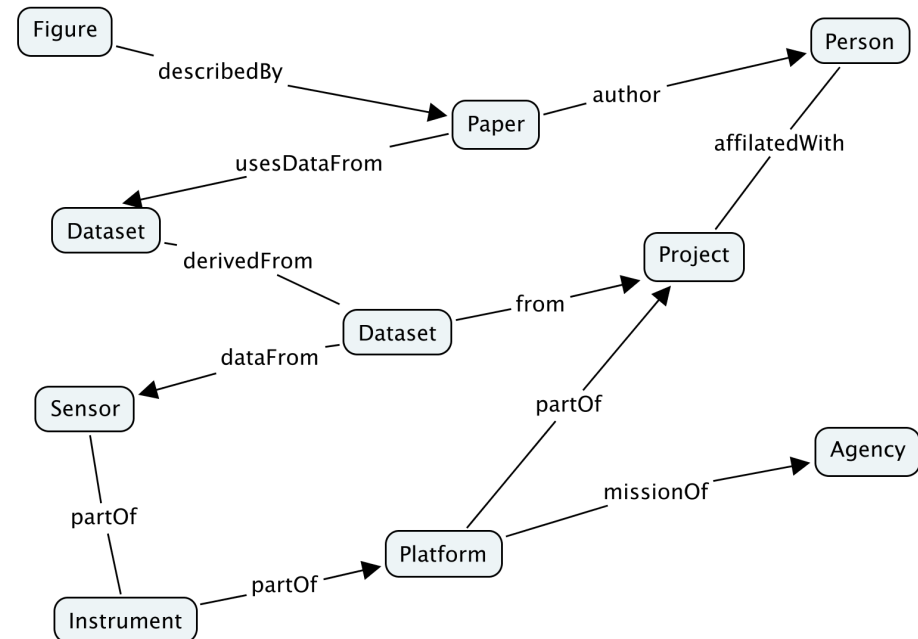
National Climate Change
Human Health
Islands
Energy Supply and Use
Regional Adaptation
Midwest
Great Plains
Sectoral Adaptation
Southwest
Northeast
Society
Ecosystems
Coasts
Water Resources
Global Climate Change
Alaska
Transportation
Southeast
Agriculture



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GCIS

- Create an *entity* from the structured metadata about each thing – tag with related *concepts*.
- Identify it with a persistent, controlled *identifier*.
- Present with a human readable web page and a *machine interface*.
- Represent all *relationships* between items.



Interagency Information Integration

GCIS can use relationships between all relevant information about global change across the agencies:

- From observations to datasets to research papers to models to analyses to organizations to people to synthesized reports to human impacts...
- Determine *agency interdependencies* -- An EPA analysis uses a NOAA model dependent on observations from a NASA satellite.
- Can present *unique interagency metrics* "How many papers referenced datasets from a specific satellite?"
- Direct users *back to agency data centers* for more detailed information and the actual content and data.



GCIS Benefits

NCA Web Portal

- NCA content available online, Dec. 2013
- Searchable, linkable
- Complete provenance traceability
- Links back to agency information sources
- Construct, prototype and test the initial framework
- Use constrained scope and dedicated staff to accomplish a lot in a short time
- Ensure the system design is extensible and able to grow to meet long term GCIS needs

GCIS

- A single web site can lead back to agency global change information across the program
- A friendly, accessible entry into global change information for non-scientists
- Global, persistent, reusable identifiers for each item
- Integrated data catalog provides interagency metrics, data mining, searching, etc.
- Interagency relationships allow discovery of interdependencies and increase collaboration opportunities
- Agency information mapped into a common, consistent model with a standard vocabulary
- Concept tagging and linking improves search results for agency products



Questions and Comments

For more information, visit <http://www.globalchange.gov>



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